LED COLOR

Usage Precautions of Integrated LEDs

内置IC灯珠使用注意事项

Precaution for Use (使用注意事項)

1. The chips should not be used directly in any type of fluid such as water, oil, organic solvent, etc.(晶片不可被直接用於任何液體，例如水、油、有機溶劑等等)
2. When the LEDs are illuminating, the maximum ambient temperature should be first considered before operation.(使用此 LED 前，應在操作前先確認環境的最高溫度)
3. LEDs must be stored in a clean environment. A sealed container with a nitrogen atmosphere is necessary if the storage period is over 3 months after shipping.
   (LEDS 應存於一個乾淨的環境。如使用後要保存超過三個月的時間，需在有氮氣中的密閉空間下)
4. The LEDs must be used within seven days after unpacked. Unused products must be repacked in an anti-electrostatic package, folded to close any opening and then stored in a dry and cool space.
   (LED 必須在開封後七天內使用。未使用的產品必須被重新包裝在防靜電包裝內，折疊封閉任何開口，並存放在乾燥、陰涼的空間)
5. The appearance and specifications of the products may be modified for improvement without further notice.
   (產品的外觀和規格可能被修改或改善，恕不另行通知。)
6. The LEDs are sensitive to the static electricity and surge. It is strongly recommended to use a grounded wrist band and anti-electrostatic glove when handling the LEDs. If a voltage over the absolute maximum rating is applied to LEDs, it will damage LEDs. Damaged LEDs will show some abnormal characteristics such as remarkable increase of leak current, lower turn-on voltage and getting unlit at low current.
   (LED 對靜電敏感。強烈建議在處理 LED 時要使用接地手環，防靜電手套。當電壓超過絕對最大額定值，會損壞 LED。損壞的 LED 會顯示一些異常特徵，如漏電流顯著增加，較低的導通電壓，並在低電流下不亮。)

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5 boxes per carton is available depending on shipment quantity.
(裝貨量每一紙箱可裝載 5 袋)

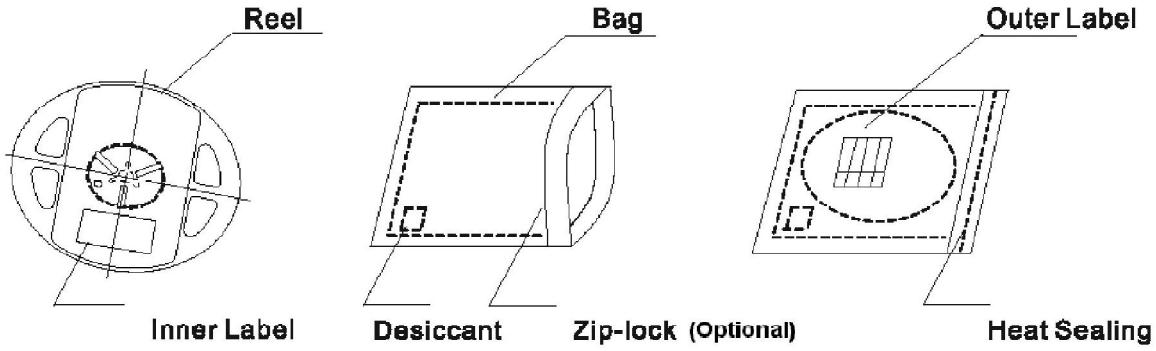
Dry Pack （**乾燥包裝方法**）

All SMD optical devices are MOISTURE SENSITIVE Avoid exposure to moisture at all times during transportation or storage. Every reel is packaged in a moisture protected anti-static bag. Each bag is properly sealed prior to shipment.

(表面黏著光學元件是對**濕氣敏感的**。每個捲軸被包裝在防潮保護的防靜電袋裡，每袋發貨前需密封，避免在任何時候運輸或儲存過程中接觸濕氣。)

Upon request, a humidity indicator will be included in the moisture protected anti-static bag prior to shipment.
(根據要求，會在出貨前將濕度指示卡裝入被受保護的防靜電袋裡)

The packaging sequence is as follows: (包裝順序如下)



Baking （**烘烤**）

Baking before soldering is recommended when the package has been unsealed for 72hours.
(當包裝已開封 72 小時,在焊接時建議先烘烤)

The conditions are as followings: (條件如下述)

60±3℃×(12~24hrs)and<5%RH, taped reel type. (捲帶內)

100±3℃×(45min~1hr), bulk type.(散裝)

130±3℃×(15min~30min), bulk type.(散裝)

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PRECAUTIONS (**注意事項**)

1. Avoid exposure to moisture at all times during transportation or storage.
   (避免在任何運輸或儲存的過程中接觸濕氣)
2. Anti-Static precaution must be taken when handling GaN, InGaN, and AlInGaP products.
   (處理氮化鎵，氮化銦鎵及磷化鋁銦鎵產品時，必須採取防靜電措施)
3. It is suggested to connect the unit with a current limiting resistor of the proper size. Avoid applying a reverse voltage beyond the specified limit.
   (建議該元件應具有適當大小的限流電阻連接。避免施加反向電壓超出規定限定值。)
4. Avoid operation beyond the limits as specified by the absolute maximum ratings.
   (避免操作超出所指定的絕對最大額定值)
5. Avoid direct contact with the surface through which the LED emits light.
   (LED 發光時，避免與表面直接接觸)
6. If possible, assemble the unit in a clean room or dust-free environment.
   (如果可能的話，組裝程序應在潔淨室或無塵環境)

Reflow Soldering (**迴流焊**)

Recommend soldering paste specifications: (推薦焊錫規格)

1. Operating temp.: Above 220 ^{O}C ,60sec(操作溫度： 220 度以上 60 秒)
2. Peak temp.:260 ^{O}CMax.,10sec Max.(峰值溫度：最高 260 度、最多 10 秒)
3. Never take next process until the component is cooled down to room temperature after reflow.(不做任何步驟,直到元件恢復常溫後再溶焊)
4. The recommended reflow soldering profile (measuring on the surface of the LED terminal) is following: (推薦的迴流焊溫度曲線（測量 LED 的終端表面上）如下述：)
   Lead-free Solder Profile 無鉛焊料簡介
5. Reflow soldering should not be done more than two times 迴流焊不可執行超過兩次

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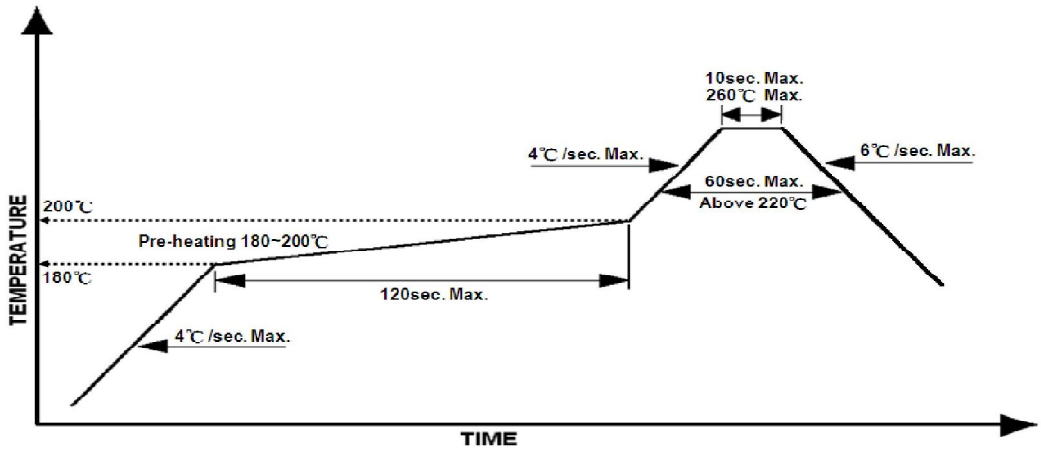

Temperature vs. Time

(溫度與時間對應圖)

Reworking （重工）

- Rework should be completed within 5 seconds under 260 °C.(重工需在 260 溫度下 5 秒內)
- The iron tip must not come in contact with the copper foil. (烙鐵頭必須不與銅箔接觸)
- Twin-head type is preferred.(雙頭型為首選)。

Cleaning（清潔）

Following are cleaning procedures after soldering: (下述為是焊接後清洗程序)

- An alcohol-based solvent such as isopropyl alcohol (IPA) is recommended.
  (建議醇系溶劑，如異丙醇)
- Temperature x Time should be 50°C x 30sec. or <30°C x 3min
  (溫度 x 時間需 50 °C x 30 秒或<30 °C x 3 分)
- Ultra sonic cleaning: < 15W/ bath; bath volume ≤ 1liter
  (超音波清潔：小於 15W / 洗滌; 洗滌值 ≤ 1 升)
- Curing: 100 °C max, <3min
  (固化：最大 100 度,小於三分鐘)

Cautions of Pick and Place （拾起與放置注意事項）

- Avoid stress on the resin at elevated temperature.(避免樹酯在高溫下受壓)
- Avoid rubbing or scraping the resin by any object.(避免任何物體刮或摩擦樹酯)
- Electric-static may cause damage to the component. Please ensure that the equipment is properly grounded. Use of an ionizer fan is recommended.
  (靜電可能會損壞組件。請確保設備已正確接地。建議使用離子風扇。)